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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,496	10/09/2003	Xiao-Yi Xiao	SYR-HDAC-5003-U	8276
32793	7590	03/28/2006	EXAMINER	
TAKEDA SAN DIEGO, INC. 10410 SCIENCE CENTER DRIVE SAN DIEGO, CA 92121			FREISTEIN, ANDREW B	
		ART UNIT	PAPER NUMBER	
		1626		

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/682,496	XIAO, XIAO-YI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Andrew B. Freistein	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 March 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-36 and 38-65 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 and 11-15 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 10 and 16-65 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/2/06.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

The claim amendment filed 3/8/2006 has been entered.

Claims 1-36 and 38-65 are currently pending in the instant application. Claim 37 was cancelled.

### ***Information Disclosure Statement***

Applicant's information disclosure statement (IDS), filed on 2/2/2006, filed after the mailing of the first Office Action and containing 15 pages and just under 400 references, has been considered. Please refer to Applicant's copies of the 1449 submitted herewith.

### ***Claim Rejections - 35 USC § 102***

(1) Claim 10 was rejected under 35 U.S.C. 102(b) as being anticipated by Molino et al., US 5,162,336. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(2) Claim 10 was rejected under 35 U.S.C. 102(b) as being anticipated by Nemes et al. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(3) Claim 16 was rejected under 35 U.S.C. 102(b) as being anticipated by Engel et al., US 5,985,834. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(4) Claim 17 was rejected under 35 U.S.C. 102(b) as being anticipated by Wei-Min et al. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(5) Claims 20 and 21 were rejected under 35 U.S.C. 102(b) as being anticipated by Yang. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(6) Claims 22 and 23 were rejected under 35 U.S.C. 102(b) as being anticipated by Yang and Guo. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(7) Claims 24 and 25 were rejected under 35 U.S.C. 102(b) as being anticipated by Levy et al., EP 0466548. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

(8) Claims 27 and 28 were rejected under 35 U.S.C. 102(b) as being anticipated by Dondas et al. As a result of the amendment filed 3/8/06, which defines the substituent "M," the rejection is withdrawn.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10 and 16-38 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

**As a result of the amendment filed 3/8/06, the rejections is withdrawn with respect to the substituent “M” and maintained with respect to the substituent “L.”**

**Further, Claims 10, 38 and 49-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

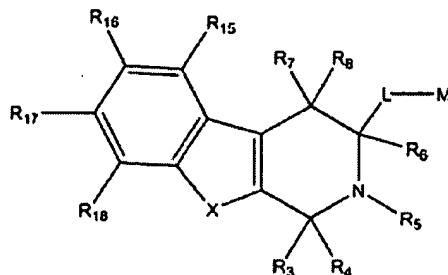
According to the Specification, “The leader group, L, **may be any substituent** comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent...It is noted that the leader group may comprise a variety of **moieties**, J, that may be used to link the leader group to the remainder of the compound. Synthetic schemes for using these different J moieties to couple the leader group are provided in the **examples**. Beyond these schemes, the particular J moiety **may be widely varied**, depending on the chemistry used to link the leader group to the ring. (emphasis added) (Spec., p. 28, paragraphs [00117] and [00118]).

Moreover, the specification states, “It is noted that the chain of atoms extending between the carbon alpha to the leader group and the M substituent may consist only of carbon atoms. Alternatively, the chain may also comprise non-carbon atoms such as nitrogen, oxygen, and sulfur.” (Spec., p. 30, paragraph [00122]).

Exemplification is not an explicit definition. The specification must set forth the definition explicitly and clearly, with reasonable clarity, deliberateness and precision, Teleflex Inc. v. Ficosa North Am Corp., 63 USPQ2d 1374, (Fed. Cir. 2002), Rexnord Corp. v. Laitram Corp., 60 USPQ2d 1854 (Fed. Cir. 2001).

In the instant application, the Specification defines the L moiety with general moieties and examples, which does not clearly and unambiguously define the structure of the compounds.

Applicant traverses the rejection arguing that one of ordinary skill in the art would understand the metes and bounds of L. Applicant points to the species election wherein



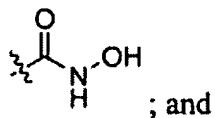
the species elected is a compound of the formula:

wherein

R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub> and R<sub>18</sub> are each hydrogen;

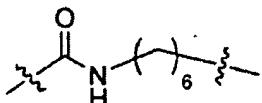
X is NR<sub>14</sub>, where R<sub>14</sub> is hydrogen;

M is

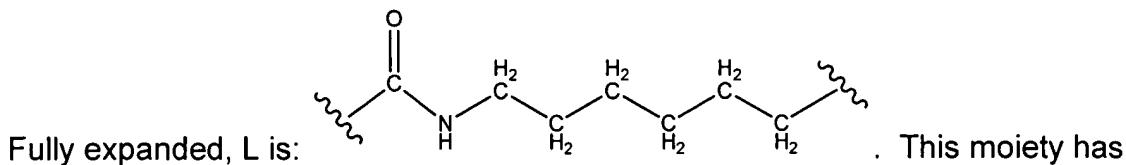


; and

L is



Applicant states that in this case, the leader group L consists of 8 atoms separating M from the ring carbon (i.e., the carbonyl carbon, the amide nitrogen, and the six carbon atoms forming -(CH<sub>2</sub>)<sub>6</sub>-). Contrary to Applicant's assertion, there are more than 8 atoms.



22 atoms (7 carbon atoms, 1 oxygen atom, 1 nitrogen atom, and 13 hydrogen atoms).

The specification defines L to have 3-12 atoms.

It seems like the Applicant intends to have only the atoms in a “chain” be counted in the 3-12 atoms limitation. However, according to paragraph [00126] of the specification,

It is also noted that the leader group may comprise one or more substituents extending from one or more atoms of the leader group backbone. In one variation, two substituents extending from the atoms extending between the carbon alpha to the leader group and the M substituent to form one or more three, four, five, six, seven, eight or nine membered rings. The atoms of the leader group forming the ring may be separated from each other by 0, 1, 2, 3, or 4 atoms.

Thus, the “backbone” can then extend to make heterocycles, such as those claimed in claims 55 and 56. Are these atoms among the 3-12 atoms that make up the substituent L? If they are, then why are the hydrogen atoms in the elected species not considered part of the 3-12 atoms and how are heterocycles part of a “chain?” This is the cause of the confusion and thus the reason why there is a lack of written description.

As a result, claims 10, 38 and 49-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

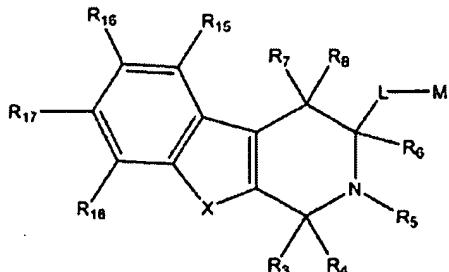
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 16-38 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 18, 19, 28-30, 33 and 34 were rejected for lacking antecedent basis. As a result of the claim amendments filed 3/8/2006 these rejections are withdrawn.

**Claims 10 and 18-36 were rejected as being indefinite because the variables M and L were not properly defined so as to particularly point out and distinctly claim the subject matter which the Applicant regard as his invention. These rejections are withdrawn with respect to the variable “M” and are maintained with respect to the variable “L.” Furthermore, newly added claims 39-65 are rejected under 35 USC 112, 2<sup>nd</sup> paragraph as being indefinite with respect to variable “L.”**

Applicant traverses the rejection of the variable “L” asserting that one of ordinary skill in the art would understand the metes and bounds of L. Specifically, Applicant “fail[s] to see how one of ordinary skill in the art would not be able to count the number of atoms positioned between M and the carbon ring atom to which L is attached and determine whether there are between 3-12 atoms separating M from the ring atom.” Examiner respectfully disagrees with Applicant’s arguments. As noted above, the number of atoms is confusing. For example, the species elected is:



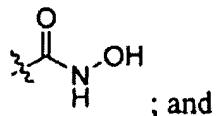
A compound of the formula:

wherein

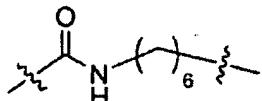
$R_3, R_4, R_5, R_6, R_7, R_8, R_{15}, R_{16}, R_{17}$  and  $R_{18}$  are each hydrogen;

X is NR<sub>14</sub>, where R<sub>14</sub> is hydrogen;

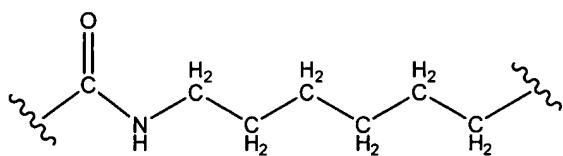
Mis



Lis



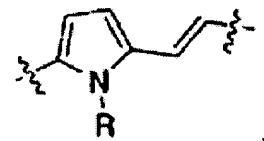
Applicant states that in this case, the leader group L consists of 8 atoms separating M from the ring carbon (i.e., the carbonyl carbon, the amide nitrogen, and the six carbon atoms forming -(CH<sub>2</sub>)<sub>6</sub>-). Contrary to Applicant's assertion, there are more than 8 atoms.



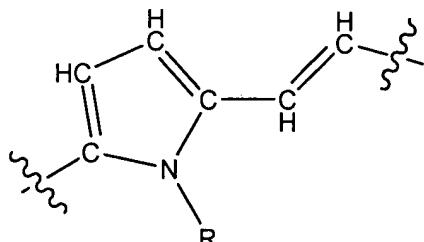
22 atoms (7 carbon atoms, 1 oxygen atom, 1 nitrogen atom, and 13 hydrogen atoms).

The specification defines L to have 3-12 atoms.

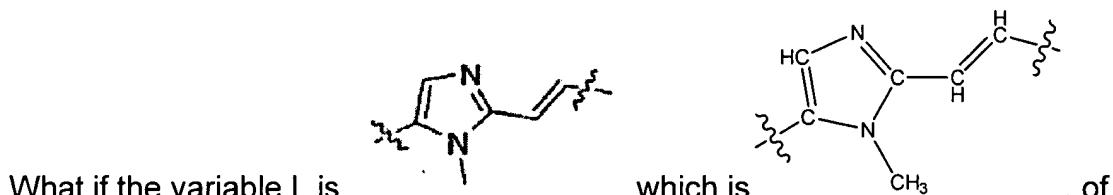
Applicant claims that this is only 8 atoms, because only the carbonyl carbon, the amide nitrogen, and the six carbon atoms forming -(CH<sub>2</sub>)<sub>6</sub>- are to be counted in the "chain." However, claim 55 is drawn to a compound according to claim 10, wherein L is



selected from a group consisting of 33 heterocyclic rings, such as

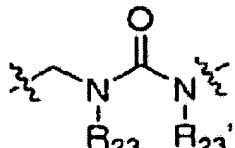


which is . There is no way to determine precisely how many atoms there are in this moiety. There are 6 carbon atoms, 1 nitrogen atom and 4 hydrogen atoms, which adds up to 11 total atoms. However, there is also the variable R, which has no definition. Assuming R to be H, there are 12 total atoms within this group. But, what part of the moiety is the "chain?" The chain is only CH<sub>2</sub>=CH<sub>2</sub>, which is only 2 atoms (if the H do not count, as they didn't count according to Applicant's calculation of the elected species).



What if the variable L is , which is , of claim 55? Here are a total of 14 atoms (6 carbons, 2 nitrogens, and 6 hydrogens), which is greater than the 3-12 limitation.

Similarly, claim 38 is drawn to a compound according to claim 10, wherein “a portion of L that is attached to the ring comprises a moiety selected from the group



consisting of...” One possible moiety is: R23CNC(=O)N(R23)C2=CC=C2, wherein R<sub>23</sub> is C<sub>1-10</sub>alkyl. In this case, there are a minimum of 2 carbons, 2 nitrogens, 1 oxygen and 8 hydrogens, which adds up to 13 atoms. However there can be an additional 18 carbons and 36 additional hydrogens. Thus, how can the claims be limited to 3-12 atoms, if the minimum number of atoms in this case is 12 and the maximum number of atoms is 66?

In addition to claims 55 and 38, claims 56-65 also contain various definitions of L that are not clear. Thus, Applicant’s question of why one cannot add up the number of atoms is not an easy one to answer and is precisely why the claims are indefinite. This rejection may be overcome by explicitly defining the variables that are represented by the variable L.

Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 56 is drawn to a compound according to claim 10, wherein L is selected from a number of five-membered heterocyclic compounds wherein one of the Nitrogen atoms is substituted with “R.” However, there is no definition of “R” in the claims, which renders the claim indefinite.

***Claim Objections***

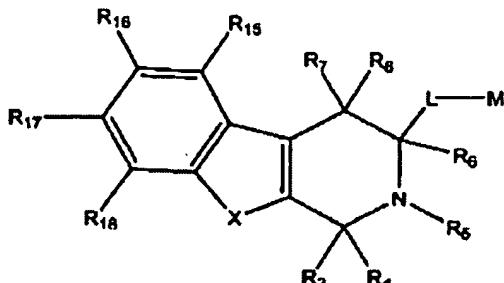
(1) The amendment filed 3/8/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Claim 56 is drawn to a compound according to claim 10, wherein L is selected from a number of five-membered heterocyclic compounds wherein one of the Nitrogen atoms is substituted with "R." However, there is no definition of "R" in the claims and there is definition of "R" or these particular structures in the specification. Applicant is required to cancel the new matter in the reply to this Office Action.

- (2) Claims 10 and 36-65 are objected to as containing non-elected subject matter.  
(3) Claims 36-65 are objected to as being dependent upon a rejected base claim.

***Allowable Subject Matter***

The following subject matter is deemed allowable:



Compounds of the Formula of Claim 10,

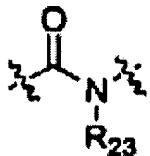
wherein:

R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub> and R<sub>18</sub> are each independently Hydrogen or C<sub>1-4</sub>alkyl;

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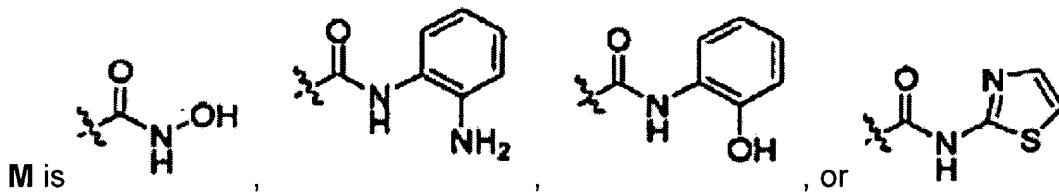
X is NR<sub>14</sub>;

R<sub>14</sub> is Hydrogen or C<sub>1-4</sub>alkyl;



L is ;

R<sub>23</sub> is C<sub>1-10</sub>alkyl; and



#### *Telephone Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew B. Freistein whose telephone number is (571) 272-8515. The examiner can normally be reached Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph M<sup>c</sup>Kane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Andrew B. Freistein  
Patent Examiner, AU 1626

  
Joseph K. M<sup>c</sup>Kane  
Supervisory Patent Examiner, AU 1626  
Date: March 21, 2006